Class VIII Session 2024-25
Subject - Science
Sample Question Paper - 4

Time Allowed: 3 hours **Maximum Marks: 80**

General Instructions:

1. The question paper consists of 34 questions and is divided into four sections, A, B, C and D.
2. All questions are compulsory.
3. Section A comprises question numbers 1 to 15. These are multiple choice questions carrying one mark each. You are to select one most appropriate response out of the four provided options.
4. Section B comprises question numbers 16 to 22. These are SAQs carrying two marks each.
5. Section C comprises question numbers 23 to 31. These are SAQs carrying four marks each.
6. Section D comprises question numbers 32 to 34. These are SAQs carrying five marks each.

Section A

1. Which of the following gas is evolved in the process of anerobic digestion of organic waste? **[1]**

   a) Biogas
   b) Nitrogen gas
   c) Water gas
   d) Oxygen gas

2. There are more anti - banterial drugs than anti - viral drugs because: **[1]**

   a) Viral diseases are intracellular.
   b) Bacterial diseases are intracllular.
   c) Virus is smaller than bacteria.
   d) Drugs can penetrate bacteria more effectively.

3. Which of the following can help in saving petrol and diesel? **[1]**

   I. Drive the vehicle at constant and moderate speed.
   II. Switch off the vehicle's engine at traffic lights.
   III. Keep air pressure in the tyres of vehicles low.
   IV. Regular engine tuning of the vehicle.

   a) III and IV only
   b) I, II and IV only
   c) II and IV only
   d) I and II only

4. If 10 kg of a fuel X produces 1,60,000 J of heat on complete combustion then, the calorific value of X is **[1]**

   a) 16000 J/kg
   b) 16 kJ/kg
   c) 160 kJ/kg
   d) 1.6 kJ/kg

5. The Red Data Book keeps a record of all the **[1]**

   i. endemic species.
   ii. endangered plants.

iii. extinct species.

iv. endangered animals.

a) ii & iv

b) i & ii

c) ii & iii

d) i & iv

6. The number of nuclei present in a zygote is **[1]**

a) One

b) None

c) Four

d) Two

7. Adam's apple is observed in **[1]**

a) girls

b) both boys and girls

c) boys

d) women

8. Choose the correct option. **[1]**

I. A blunt knife cuts with difficulty because of increased pressure it creates.

II. On increasing the level of height, atmospheric pressure decreases.

a) I only

b) II only

c) Both I and II

d) Both are incorrect

9. Which one of the following personalities uses spikers in shoes? **[1]**

a) Rugby player

b) painter

c) Lawyer

d) Doctor

10. If we listen to the sound of lightening 10 sec after observing it how far are we from the place where lightening occurs? **[1]**

(Take, speed of sound = 330 m/s)

a) 3300 m

b) 1650 m

c) 330 m

d) 825 m

11. Tin cans are the tin electroplated on iron. These tin cans are used to preserve food items. Why are iron cans not used without tin coating? **[1]**

a) Tin is lighter than iron

b) Tin is more reactive than iron

c) Tin is less reactive than iron

d) Tin is cheaper than iron

12. A gold leaf electroscope **[1]**

a) All of these

b) identifies a changed body

c) produces change

d) measures change

13. A real image is formed when two or more **[1]**

a) Reflected rays appear to meet

b) Reflected rays meet

c) Both Reflected rays meet and Refracted rays meet

d) Refracted rays meet

14. State true or false: **[1]**

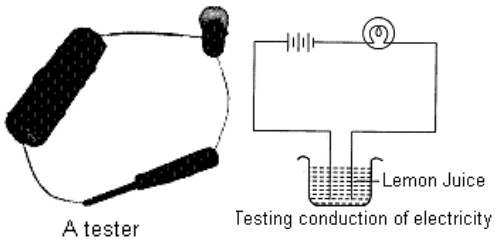
Plants and animals found in a particular area is termed as flora and fauna of that area.

15. State true or false: **[1]**

Sprinkling powder on the carom board reduces friction.

Section B

16. Explain the formation of curd from the milk. **[2]**
17. Describe characteristics and uses of coke. **[2]**
18. Why any of the fuel is not considered as an ideal fuel? **[2]**
19. Explain the change in body shape of boys and girls. **[2]**
20. List three sources of noise pollution in your locality. **[2]**
21. In previous class you have used a tester as shown is figure given below to test whether electric current passed through a particular material or not? When this tester is used for liquids sometimes even though the liquid allows the electric current to pass and the circuit is complete, bulb does not glow. What can be the reason? **[2]**



A tester

Testing conduction of electricity

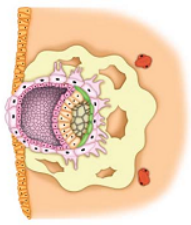
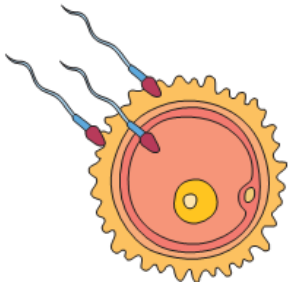
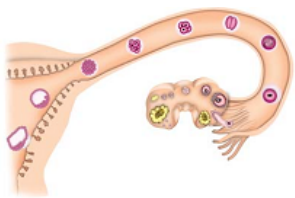
22. How many types of non-optical aids for visually challenged persons are used? **[2]**

Section C

23. How do you control the weeds? **[4]**
24. Why are fossil fuels consider as non-renewable sources of energy. Why? **[4]**
25. How do chicks born in hens? **[4]**
26. How do you feel a person become mature? **[4]**
27. Two persons are applying forces on two opposite sides of a moving cart. The cart still moves at the same speed in the same direction. What do you infer about the magnitudes and direction of the forces applied? **[4]**
28. What is an Echo? When one can hear the echo of sharp sound? Why cannot we hear an echo in a small hall? **[4]**
29. Is electric shock lethal? What should be done in case of electric shock? **[4]**
30. Why does lightning usually strike tall buildings? **[4]**
31. Write the differentiate between Luminous and Non Luminous objects. **[4]**

Section D

32. Observe the following figures. **[5]**

a.  b.  c.  d. 

i. Identify the stages a to d in Fig. during the development of the human baby.

ii. Arrange the stages in the correct sequence of development.

iii. Explain the development that takes place in any one stage.

33. a. What is meant by contact force? Explain with the help of an example. **[5]**

b. What is meant by non contact force? Explain with the help of an example.

34. a. What is meant by the chemical effect of electric current? Explain with help of an example? **[5]**

b. Name any two application of the chemical effect of electric current.

Solution

Section A

1. **(a)** Biogas
   Explanation: Biogas
2. **(b)** Bacterial diseases are intracllular.
   Explanation: Bacterial diseases are intracllular.
3. **(b)** I, II and IV only
   Explanation: Air pressure in the tyres should be just correct.
4. **(b)** 16 kJ/kg
   Explanation: 10 kg of X produces heat = 1,60,000 J
   1 kg of X will produce heat = $\frac{1,60,000}{10}$J = 1,6000 J = 16 kJ
   Hence, calorific value of fuel X = 16 kJ/kg
5. **(a)** ii & iv
   Explanation: ii & iv
6. **(a)** One
   Explanation: Zygote is formed by fusion of male and female gametes. Each zygote contains one nuclei having 2n number of chromosome. Zygote is the first cell of life.
7. **(c)** boys
   Explanation: boys
8. **(b)** II only
   Explanation: A blunt knife creates relatively less pressure due to increased cutting edge area. As we go up in the atmosphere from the surface of earth, the atmosphere pressure goes on decreasing.
9. **(a)** Rugby player
   Explanation: Rugby player
10. **(a)** 3300 m
    Explanation: Given, speed of sound = 330 m/s and time, t =10 s
    We know that, speed = $\frac{distance}{time}$
    ∴ distance = speed $\times$ time
    So, distance travelled by sound in 10s.
    = 330 $\times$ 10 = 3300 m
11. **(c)** Tin is less reactive than iron
    Explanation: Tin is less reactive than iron
12. **(b)** identifies a changed body
    Explanation: identifies a changed body
13. **(c)** Both Reflected rays meet and Refracted rays meet
    Explanation: Both Reflected rays meet and Refracted rays meet

14. **(a)** True
Explanation: True

15. **(a)** True
Explanation: True

Section B

16. Curds are a dairy product produced by bacterial fermentation of milk. Bacteria that is used for this purpose is Lactobacillus delbrueckii . This is a kind of bacteria which can convert a sugar into an acid by means of fermentation. Milk contains a sugar called lactose, when milk is heated to a temperature of 30-40 °C and a small amount of old curd added to it, the lactobacillus in that curd sample starts to grow and convert the lactose into lactic acid, which imparts the sour taste to curd.
17. It is a tough, porous and black substances. It is almost pure form of carbon. 'Coke is obtained by heating soft coal in the absence or' little supply of air.
It is used in the manufacture of steel and in the extraction of many metals.
18. Ideal fuel is the fuel which is inexpensive, it is easily available, it should have a high calorific value, it should niether burn too fast or too slow and it should leave no residue on combustion. Therefore, if a fuel is said to be an ideal fuel, it should contain all these qualities. We see that no fossil fuel is having all these properties. Therefore, no fuel can be considered as an ideal fuel.
19. Senior boys have broader shoulders and wider chests than boys in junior classes because they have entered the age of puberty when shoulders generally broaden as a result of growth. In girls, the region below the waist becomes wider.
In boys, the muscles of the body grow more prominently than in the girls. Thus, changes occurring in adolescent boys and girls are different.
20. Sources of noise pollution are as follows:
    i. Horns of vehicles
    ii. Loudspeakers of temples
    iii. Generators running without silencers.
21. Due to the heating effect of current, the filament of the bulb gets heated to such a high temperature that it starts glowing. However, if the current through a circuit is too small, the filament of the bulb does not get heated to a high temperature and it does not glow. The reason why is the current in the circuit small is that though a material may conduct electricity, it may not conduct it as easily as a metal. As a result, though the circuit of the tester becomes complete and the current flows through it, the current is too small.
22. Non-optical aids include visual aids, tactual aids (using the sense of touch), auditory aids (using the sense of hearing) and electronic aids. With the help of visual aids, required size of words, suitable intensity of light and material at proper distance can be provided, in taking notes, reading and writing and in learning mathematics. Auditory aids include cassette, tape recorders, talking books and other such programs. Electronic aids such as talking calculators are also available for performing many computations. Closed circuit television, also an electronic aid, enlarges printed material with suitable contrast and illumination. Nowadays, use of audio CDs and voice boxes with computers are also very helpful for listening and writing the desired text.

Section C

23. **Weeds can be controlled by :**
(i) Tilling of crops before sowing. This helps in uprooting the weeds which dry up and are killed
(ii) Weeding or removal of weeds should be done before they produce flowers or seeds.
(iii) Physical removal of weeds should be done from time to time using trowel or a tractor driver harrow.
(iv) Rotation of crops also help in controlling weeds.
(v) Weedicides, chemicals to control weeds, should be sprayed in the fields during vegetative growth of weeds before flowering or seeds formation.
(vi) Biological weed control refers to any technique that involves the use of natural enemies of weed plants to control the germination of weed seeds or the spread of established plants.
(vii) Chemical weed control refers to any technique that involves the application of a chemical (herbicide) to weeds or soil to control the germination or growth of the weed species.
(viii) Mechanical weed control refers to any technique that involves the use of farm equipment to control weeds. The two mechanical control techniques most often used are tillage and mowing.
24. Fossil fuels like coal, petroleum, natural gas etc., once exhausted completely, cannot be renewed immediately.
It is a very long and slow process.
It takes millions of year to form again. So it is always suggest to use them carefully and conserve for future generation.
Hence fossil fuels consider as non- renewable source of energy.

25. After fertilisation the zygote divides repeatedly and travels down the oviduct. As it travels down, many protective layers are formed around it. The hard sell on the hen's egg is one such protective layer. The hen finally lays egg. The embryo takes about three weeks to develop into a chick. After the chick is completely developed it bursts open the egg shell.

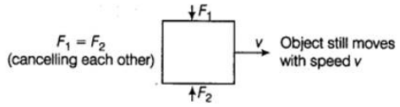
26.
- Adolescence is a period of change in one's way of thinking.
- They become more independent than before and are also self-conscious.
- Intellectual development takes place and they tend to spend considerable time thinking.

27. We infer about the magnitudes and direction of the forces applied that:

i. The magnitude of forces will be equal and the same.

ii. The forces will act in the opposite direction.

iii. As a result, they cancel out each other and the net effect will become less.



28. Echo is the repetition of sound due to the reflection of original sound by a large and hard obstacle. An echo can be heard only if you are 17 meters away from the surface that reflects sounds. In a small hall distance is less than 17 meter that is why we cannot hear an echo in a small hall.

29. The electric shocks vary in their effect, as they can be mild to severe, sometimes they even lead to death i.e. lethal. Electric shocks can cause severe burns and tissue damage. The function of the heart can also be disrupted by a strong electric shock. Irreparable injury to vital organs result into lethality. If shock occurs indoors, immediate disconnection of power supply is required. If a person is in contact with source of electric current, stand on a dry rubber mat, wooden slab etc and try to move the person using a completely dry wooden pole.

30. Lightning tends to strike the taller objects in an area, such as tall buildings and trees. It's not that those objects attract lightning, it's just that lightning is the result of two narrow channels of opposite charge making contact with each other and the charge flows easier through these objects as opposed to air, so taller the object, lesser air charge has to build through.

31.

Sr. No.	**Luminous objects**	**Non Luminous objects**
1.	The objects which emit their own light are known as luminous objects. They are also called source of light.	The objects which do not emit their own light are known as Non luminous objects.
2.	Examples: The Sun, fire, flame of a candle and an electric lamp.	Examples: Table, chair, the Moon, the planets, a tree, etc.

Section D

32. i. The stages are as follows:

a. Embedding of the embryo in the uterus of the mother, i.e. implantation.

b. Fusion of male and female gametes, i.e. fertilization.

c. Formation of the zygote and its development into an embryo as it travels from oviducts to the uterus.

d. Fusion of nuclei during fertilization, in a zygote.

ii. The correct sequence of these stages would be :

i. b. Fusion of male and female gametes, i.e. fertilization.

ii. d. Fusion of nuclei of two gametes in a zygote.

iii. c. Development of a zygote to an embryo as it travels down the oviducts to reach the uterus.

iv. a. Embedding of the embryo in uterine walls of the mother, i.e. implantation.

Thus, the correct sequence would be b, d, c, a.

iii. During fertilization, the male gamete sperm reaches up to the female gamete, ovum, or egg cell. One of the sperms that reach the ovum, releases its nuclei into the egg cell. Then, inside the egg cell, or the zygote, takes place the fusion of the nucleus of that sperm with the nucleus of the female gamete. Thus, the product of fertilization, the zygote is formed. The rest of the sperm degenerates.

33. a. A force which can be exerted by an object on another object only through some contact is called a contact force. The examples of contact forces are: muscular force and frictional force.

Since muscular force is applied on an object with our muscles, hence it is a contact force. For example, a boy pulling a cart. Frictional force is also applied between the two surfaces in contact with each other, for example, a car moving on the road is stopped by applying friction.

b. A force which can be exerted by an object on another object even from a distance without touching each other is called a non contact force.

Magnetic force and gravitational force are examples of non contact forces. A magnet can attract an iron object even at a distance, so it is a non contact force.

Gravitational force is also applied on all objects even at a distance, so it is a non contact force. For example, an apple falls from a tree comes to the earth in the downward direction.

34. a. When electric current is passed through a conducting solution, some chemical reaction takes place. The resulting effects are called chemical effects of electric current.

Examples:

i. When electric current is passed through water, water dissociates into hydrogen and oxygen.

ii. When electric current is passed through the solution of a metal salt, such as solution of copper sulphate, metal gets deposited at the negative electrode, because metal is positively charged.

iii. Sometimes, the colour of solution also changes when electric current passes through it.

b. i. Electroplating: One metal is coated on the other substance or metal by the effect of electric current. This is called electroplating.

ii. Electrolysis: The compound is decomposed into its constituents under the effect of electric current is called electrolysis.